

**UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA**

SONY MUSIC ENTERTAINMENT, *et al.*,

Plaintiffs,

v.

COX COMMUNICATIONS, INC., *et al.*,

Defendants.

Case No. 1:18-cv-00950-LO-JFA

**CONTAINS HIGHLY CONFIDENTIAL –  
ATTORNEYS' EYES ONLY  
INFORMATION**

**DECLARATION OF SAM BAHUN**

I, Sam Bahun, hereby declare pursuant to 28 U.S.C. § 1746 that the following statements are true and correct to the best of my personal knowledge and belief:

**Introduction**

1. I am the Director of Strategic Accounts of MarkMonitor, Inc. (“MarkMonitor”), a company that, among other things, monitors online networks for infringing content. I have personal knowledge of the facts set forth herein and, if necessary, I would and could competently testify thereto if called as a witness in this matter. I submit this declaration in support of Plaintiffs’ Motion for Summary Judgment.

2. MarkMonitor is widely recognized as the global leader in enterprise brand protection, including various aspects of intellectual property infringement. Over half of the Fortune 100, 1,300+ customers in over 50 countries and industry leaders in technology, fashion, sports, entertainment, pharma, media, auto and healthcare trust MarkMonitor and rely on its

technology, expertise, and industry relationships every day to help them protect their brands and content online.

3. I have 15 years of experience working within the anti-piracy industry, including in working with technical staff on anti-piracy services. The anti-piracy work I have been closely involved with includes monitoring of infringement on peer to peer networks on behalf of the movie, music, software, publishing, professional sports, and video game industries. I have worked at MarkMonitor for a total of approximately nine years, and I have also worked at MediaSentry, another anti-piracy company.

4. In my duties at MarkMonitor, I have been closely involved with work that MarkMonitor has done for the Recording Industry Association of America (“RIAA”), on behalf of its member companies (the “Record Companies”) and the music industry more generally, related to detecting the online distribution of sound recordings belonging to the Record Companies.

5. Below I provide an overview of the process MarkMonitor employed for the RIAA with respect to monitoring, verifying and sending infringement notices to Cox regarding Cox users downloading and uploading files on peer-to-peer (“P2P”) networks. For purposes of this declaration, I use the term “Cox User” to refer to someone using the Cox Internet service.

6. This declaration is geared to a general audience. Though I could discuss the technology and MarkMonitor’s process in more technical terms, I assume that this level of detail is more useful to the Court.

#### **File Sharing Networks Monitored**

7. RIAA retained MarkMonitor to [REDACTED]  
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

8. By way of background, each P2P network is comprised of individuals with compatible software installed on their computers, which are connected to each other via the Internet. Such Internet-connected users on a P2P network are known as “peers.” Peers within a network use P2P software to communicate directly with each other over their Internet connections, including to download or disseminate files containing sound recordings. Peers can only reach and communicate with one another on a P2P network when they are connected to the Internet.

9. Some P2P networks, including BitTorrent, include a multi-source distribution model whereby the file data is divided into small parts, spread among the users on the network. Peers request pieces of data from each other continuously until they have completed the entire download. Whenever a peer has received a new piece of data, that peer then begins distributing it to other peers on the network who wish to download it. This design effectively eliminates one of the biggest bottlenecks of other file-sharing systems, where the download performance of all users is degraded when the demand for a specific file is high.

10. In the context of computer operating systems such as Windows and macOS, users identify files by their filenames, for instance as “report.docx” or “song.mp3.” P2P networks keep such filenames associated with files, but they go a step further. They use standardized procedures known as cryptographic hash functions to generate a single alphanumeric string—called a hash or hash value—for a file based upon the data contained within the file. Depending on the type of hash algorithm used, hashes are usually written as 32 or 40 alphanumeric

characters. Two files that have the same hash are identical to one other; they are copies of the same file and have the same contents. Two files that differ in even the smallest way will yield different hash values. P2P networks use such hashes in a variety of ways, including to recognize that multiple peers have a particular file the user is attempting to download. Relying on a common hash as an indicator the files are identical, the P2P network can provide the file to the downloader by pulling pieces from multiple peers.

11. If a P2P network user—including MarkMonitor acting as a peer—finds two files with the same name, it is possible their contents differ. However, if two files with the same hash are found, the contents of the two files are guaranteed to be identical.<sup>1</sup> The hash enables users to recognize a file is an exact duplicate of one whose music content has already been identified.

### **Detection and Data Collection**

12. The search process and functionality of the MarkMonitor Software [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

13. MarkMonitor's Software [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

---

<sup>1</sup>Of standard cryptographic hash functions, this guarantee is actually short of 100% at a technical matter, but by a negligible difference so close to zero that the guarantee widely is taken to be exactly 100% in practice.



[REDACTED]

14. MarkMonitor's Software confirmed [REDACTED]

[REDACTED]

**Verification of Infringing Files**

15. For the work MarkMonitor was engaged in for RIAA generally (i.e., not just for notices to Cox), [REDACTED]

[REDACTED]

[REDACTED]

16. Thereafter, each subsequent instance of the file was verified [REDACTED]

[REDACTED]

Notice Sending

17. [REDACTED]

[REDACTED] MarkMonitor sent the notices to Cox's registered email address for receiving copyright notices.

18. From the period of January 2, 2012 to March 31, 2015, MarkMonitor sent 284,444 infringement notices to Cox on behalf of RIAA. Each notice issued under penalty of perjury with the information required under the Digital Millennium Copyright Act and under the name of the RIAA.

19. For this project, [REDACTED]

[REDACTED]

[REDACTED] Each P2P service communicates this information differently, but under the BitTorrent protocol, peers exchange “BitField” data from which the percentage of the total available sound recording(s) can be calculated. BitTorrent only populates this BitField data after it has verified the content the user possesses using the hash of each downloaded piece. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

### **Production of Evidence**

20. MarkMonitor provided several data sets and documents generated from the above-described processes, which I understand have been produced in discovery in this case and are attached to the Gould declaration.

21. Infringement Notice: PX 538 (bates numbered Plaintiffs\_00100723) is a representative infringement notice sent to Cox. Each of the infringement notices sent to Cox as described herein included the fields of information listed in 17 U.S.C. 512(c). The notices provide an email address to contact in the event the subject of the notice disputes the infringement reported to Cox. MarkMonitor has checked its records and has not identified any emails received disputing the infringement reports to Cox.

22. Notice Data: PX 13 (bates numbered Plaintiffs\_00286430) is a text file with [REDACTED] records of notices that, as per the process described above, MarkMonitor sent to Cox between January 2, 2012 and March 31, 2015. It includes data variables such as [REDACTED]

[REDACTED]

[REDACTED] PX 14 (bates numbered Plaintiffs\_00286280) is an Excel file of the same data. [REDACTED]

[REDACTED]

[REDACTED]

23. [REDACTED] PX 11 (bates numbered Plaintiffs\_00286431) is an Excel file with [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

24. Audio Files: PX 39 is a hard drive of audio files [REDACTED]

[REDACTED]

[REDACTED]

MarkMonitor provided those files to Plaintiffs and I understand Plaintiffs produced them to Cox on a hard drive and also attached them to the Gould declaration. Anyone with the hard drive (PX 39) can listen to the audio recordings it contains.

25. Download Data: PX 16 (bates numbered Plaintiffs\_00286432) is an Excel file with [REDACTED]

[REDACTED] The records include, among other things, [REDACTED]



[REDACTED]

[REDACTED]

26. Case Packages: PX 33 (bates numbered MM000306) is a collection of [REDACTED]

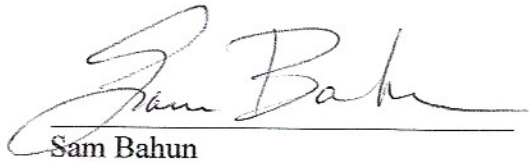
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Due to the volume of the case packages, I understand that two examples are attached to the Gould declaration rather than the entire set of [REDACTED]

Executed in Tipecity, OH this 29<sup>th</sup> day of August, 2019

  
Sam Bahun